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LABORATORY FOR METEOROLOGY AND EARTH
SCIENCES, GSFC - "A First Look at Geological
Aspects of ERTS Imagery of Wyoming"

By Dr. N. Short

TMX-68776

Presented at Preliminary Findings from Analyses of ERTS Observations, held at
Goddard Space Flight Center, Greenbelt, Maryland, 29 September 1972

Six MSS-5 frames covering most of the western half of Wyoming have been
received, analyzed by inspection and field-checked. These results will be reported
on:

(1) Rock Springs Frame

- a. A number of new faults have been found that represent an extension of pre-existing ones, most of which can be seen in the ERTS photo.
- b. The Kill pecker Dune field is easily recognized - some new dune deposits are suggested.
- c. The Wilkins Peak formation playa facies is evident and new areas may be mappable from ERTS. Of importance to iron exploration and production.

(2) Western Wind River Basin Frame

- a. It may be possible to distinguish granite from metasedimentary terrain.
- b. It appears difficult to accurately delineate the Tertrany lithologic units in the Wind River Basin except in special cases.
- c. A new and detailed lineament map of all of Wind River uplift has now been prepared. This has not previously existed.

(3) Bighorn Basin-Absarokas Mountains Frame

- a. All major tectonic features and oil producing anticlines can be recognized.
- b. Several major pediment surfaces can be picked out and correlate well with earlier mapping.
- c. Only a very few intrusions in the Absarokas can be distinguished.

(4) Miscellaneous Observations

- a. Resolution of dirt roads in sagebrush terrain ~ 10 meters
- b. Fractures in southern Wind River are Basalt dikes.

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- c. Glacial features are difficult to identify around edges of mountains.
- d. Mine workings can be distinguished with difficulty as human activities.
- e. Comparisons of U-2 and ERTS equivalent areas are surprisingly good.
- f. Basin patterns are complex - due to interaction of rock type and soils, vegetation, topography and moisture.
- g. Spurious and anomalous ground features can easily be mistaken. One striking example: Water and white trona dust were mistaken for clouds.

